

Amendments to the Drawings:

The attached sheets of drawings includes changes to the figures to enlarge the scale of the Figures and to improve resolution. Additionally, in Fig. 4 there was a typographical error which was corrected where the originally filed informal drawings used a number identifier 24, and the number used should have been 204. These sheets, which includes Figs. 1-7 replace the original sheets including Figs. 1-7.

Attachment: Replacement Sheets

REMARKS/ARGUMENTS

The October 24, 2003 Office Action sets forth a number of objections in connections with the drawings for the present application. The formal drawings submitted herewith, and reference to the discussion herein, are respectfully submitted to address the issues raised in the Office Action in connection with the drawings.

The October 24, 2003 Office Action also rejected the pending claims under 35 USC §112, second paragraph. In connection with these rejections, each of the independent claims has been amended, and reconsideration is respectfully requested.

Response to Objection to Drawings

The Examiner's suggestions and comments in connection with the drawings and specification are appreciated. Enclosed herewith are formal drawings, which are drawn to a larger scale than were the original informal drawings. It is believed that this larger scale for the drawings, and the explanation herein will clarify the issues identified by the Examiner.

Initially, the Office Action notes a concern with regard to Figure 2 of the application, stating:

For example, Figure 2 purports to illustrate the center of the field of view (element 300), however, the lead line points to a square region. In other words, one would expect the center of the field of view to be a point, rather than a region. Accordingly, this feature should be amended or explained by Applicants in the reply to the instant Office Action.

Office Action, p. 2. The below text from the specification of the patent application, when viewed in connection Fig. 2 helps to address the issue raised by the above passage from the Office Action. Specifically, in connection with Fig. 2 the patent application states in part:

Fig. 2 shows a view looking down on the track 104 of the R-theta stage 101. The chuck 102 is mounted to the track 104 such that it can be moved along the track 104, and it can be rotated about a center of rotation 202. The objective lens 120 is positioned at point 206; this position is also the center of the field of view 300 of the imaging system.

Office Action, p 5, line 22-p. 6, line 2. In reviewing the text from the Office Action, and the above passage from the patent application it appears that some confusion has arisen from an interpretation that the lead line for element 300 of Fig. 2 should be pointing to the center of the field view. In fact the element 300 of Fig. 2 is meant to refer to the field of view, which is shown to be a rectangular shape which is pointed to by the lead line for element 300. This field

of view 300 could for example represent the field of view of a wafer which would be shown on computer monitor. The center of the field of view is represented by point 206 which in the embodiment discussed corresponds to the point which is both the location of the objective lens and the center of the field of view. It is believed that the above passage from the patent application and reference to the larger scale version of Fig. 2 enclosed herewith illustrate this point.

The Office Action also notes that due to the small scale of the Fig. 2 there was difficulty resolving certain features of the Figure. For example, the Office Action states in part:

In this connection, the field of view is perhaps one of the key features of the invention, as well as its relationship to (i) the center of rotation of the stage (Fig. 2, element 202), and (ii) offset difference (Fig. 2, element 204). However, these features are drawn in extremely small scale in Figure 2, thus presenting difficulty in legibility.

Office Action p. 2. It is respectfully submitted that the enclosed larger scale formal drawing of Fig. 2 improves the legibility of the original Fig. 2. It is also respectfully submitted that the new drawings submitted herewith do not add new matter, and are provided with a larger as suggested by the Examiner at page 2 of the Office Action.

The Office Action also suggests that the scale of Figs. 4 and 5 could be enlarged to improve the legibility. As suggested, enclosed herewith are formal drawings with a larger scale for Figs. 4 and 5. The Office Action also notes that the angle theta in Fig. 2 in the original informal drawings looks more like phi than theta. The formal drawing of Fig. 2 submitted herewith more clearly shows this angle as theta.

The Office Action also raised a question as to what inner concentric circle represents in Fig. 2. This inner circle, which was not labeled in the original formal drawing corresponds to the theta stage rotator 108 which is shown in Fig. 1. Fig. 2 has been amended to identify the inner circle with the numeral 108.

Rejection of Claims 1-21

Claims 1-21 were rejected under §112 second paragraph. In rejecting these claims the office action appears to take the position that it is unclear what is meant in determining an offset between a center of rotation of the polar coordinate stage and the field of view. The Examiner goes onto state that a field of view is an area, and to note an area "contains and infinite number of points . . ." The Examiner's careful reading of the claims and the specification is appreciated.

In response to the Examiner's rejection, the independent claims have been amended to specify that the offset is determined relative to a point (the center of the field of view). It is noted that the Office Action appears to specifically suggest referring to the "center of the field of view", as suggested the claims have been amended to refer to the center of the field of view. However, it is worth noting, this amendment is intended to clarify the claims, rather than limit the claims. Specifically, it is noted that once the offset between any point in the field of view and the center of rotation is known, then by extension the offset between the center of rotation and all other points in the field of view are known, because the position of each point in the field of view would be known relative to other points in the field of view. Thus, even if one were to initially determine the offset between a point in the field of view other than the center of the field view, such a determination of this offset would effectively also operate as a determination of the offset of the center of the field of view and the center or rotation of the stage.

Addressing Question Raised by Office Action Concerning Reference from IDS

At page 6 of the Office Action, the Examiner raised a question regarding language found at col. 8. lines 17-19 of one of the references cited in an Information Disclosure Statement previously submitted in this matter. The Office Action states in part:

A reference provided by Applicants in the Information Disclosure Statement contains language which is relevant to the instant Application, and is as follows: "...rotation axis 710 is typically offset from the center of sample 310 by an amount determined during the prealignment and/or alignment" (col. 8, Ins, 17-19, emphasis added). Although said language is arguably suggestive that a calculation of the offset distance is made, there are no further details describing how to calculate the offset such that a reasonable comparison with the instant invention can be made. Commentary on this specific point in Applicants' reply to the Instant Office Action is respectfully requested.

Office Action, p. 6. It appears that the reference referred to in the above passage from the Office Action is US Patent no. 6,320,609. A review of the '609 Patent shows some discussion of an alignment process at col. 7: 1-46. As shown by this discussion it appears that the alignment process uses among other things an edge detector and a light source and precisely identifies the edge location of the shadow of sample 310 while the stage rotates the sample 310 through 360°. The '609 patent does not appear to disclose, or suggest, a process as recited by the above shown claims of the present application.

CONCLUSION

For the reasons set forth above, it is believed that all claims present in this application are patentably distinguished over the references. Therefore, reconsideration is requested, and it is requested that this application be passed to allowance.

Respectfully submitted,

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